

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

In the Matter of:

Numbering Policies for Modern
Communications

WC Docket No. 13-97

Nationwide Number Portability

WC Docket No. 17-244

COMMENTS OF TELCORDIA TECHNOLOGIES, INC. D/B/A ICONECTIV

Telcordia Technologies, Inc.¹, doing business as iconectiv (iconectiv), submits these comments responding to questions raised by the Federal Communications Commission (Commission) in its Notice of Proposed Rulemaking and Notice of Inquiry (Notice) on how best to move toward complete Nationwide Number Portability (NNP). iconectiv limits its comments to technical and operational considerations related to NNP.

iconectiv has been an authoritative partner of the communications industry for more than thirty years. A U.S. based company, iconectiv has been a major architect of the United States' telecommunications system since it was formed at the divestiture of AT&T. We have first-hand knowledge of the intricacies and complexities of creating, operating, and securing the country's telecommunications infrastructure. Our core competencies include highly scalable industry database management, numbering, interconnection and

¹ Since February 14, 2013, Telcordia, has been doing business as iconectiv.

routing services, third-party authentication, and network fraud prevention for the telecommunications industry.

While iconectiv believes that at least three of the four options for NNP identified in the Notice could be implemented, each has associated impacts that should be fully considered through an appropriate technical process that allows participation by all interested stakeholders. In particular, implementation of NNP architecture will require the consideration of an alternative to the current N-1 query approach to ported number queries. The N-1 requirement was recommended by the NANC, and adopted by the FCC as a default rule to ensure that some carrier in the call path performed the query. Such a backstop remains necessary to ensure calls are properly routed and completed and any changes to the current approach – whether as part of or prior to implementation of NNP – need to be thoroughly considered by appropriate industry standards bodies. It should be kept in mind that to the extent there are more efficient ways of ensuring that certain calls get queried during this interim period, the Commission’s rules allow carriers to contract around the N-1 default requirement.

DISCUSSION

iconectiv has been a longstanding and active participant in the subject matter of this proceeding. In addition to contributing substantial foundational work behind Local Number Portability from its inception in the 1990’s through today, iconectiv was an active contributor to the 2016 ATIS Packet Technologies and Systems

Committee (PTSC) Technical Report² and the 2016 LNPA Working Group White Paper³ on Nationwide Number Portability. Based upon our experience, iconectiv offers these brief comments limited to specific technical considerations raised in the Notice.

I. NNP Alternatives Identified in the ATIS Report

The Commission seeks comment on the feasibility of each of the four specific models of NNP outlined by ATIS in its report: (1) nationwide implementation of LRNs; (2) non-Geographic LRNs (NGLRNs); (3) commercial agreements; and (4) Telcordia Technologies' GR-2982-CORE specification.⁴

The PTSC Technical Report advises that the implementation of NNP along the lines of GR-2982-CORE (Option 4 above) would require SS7 protocol, switch data model, and call processing development. It was noted in the Report that this option is likely infeasible due, among other reasons, to the number of manufacture discontinued platforms on which such development is not viable.

Consequently, these concerns likely leave three options for thoughtful consideration. iconectiv proposed the National LRN approach (Option 1) but acknowledges that the other two remaining options are also feasible. However, it should be noted that all of these options have varying degrees of technical, regulatory, and customer impacts that need to be evaluated as part of a thorough technical review process.

While it is not possible to identify all of these challenges in advance, the scope of those identified here underscores the importance of an appropriate multi-stakeholder

² ATIS Technical Report on Nationwide Number Portability – 2016 https://apps.fcc.gov/edocs_public/attachmatch/DOC-340865A1.pdf

³ NANC LNPA WG White Paper on Non-Geographic Number Portability – August 2016 http://www.nanc-chair.org/docs/mtg_docs/Sep16_LNPA_WG_White_Paper_Non-Geographic_Number_Portability_083016.docx

⁴ Notice at para. 38. Note that GR-2982-CORE pre-dates, and is not a component of, the iconectiv business as it exists today.

technical process for identifying and resolving issues around NNP implementation. At a minimum, implementation of NNP will impact many industry processes including call detail record (CDR) processing, subscriber billing, intercarrier compensation, and caller ID issues. In addition to federal regulatory issues, state regulatory issues may also need to be resolved. Finally, implementation of NNP could have significant impact on providers of ancillary devices and services. For example, toll/call blocking software that blocks calls based on the local/toll relationship the calling number has to the called number would need to determine local/toll at a Telephone Number level rather than NPA-NXX.

iconectiv recognizes the efforts of the previous North American Numbering Council's Local Number Portability Administration Working Group (LNPA WG) which created a sub-team to identify the issues and impacts to being able to port telephone numbers anywhere in the United States. The LNPA WG submitted a White Paper to the North American Numbering Council on Non-Geographic Number Portability (NGNP), later updated in August of 2016³ with an assessment of the options identified in the ATIS PTSC 2016 Technical Report². The LNPA WG emphasized that implementation of NNP will raise numerous complex technical challenges and will require collaboration and support by all parties involved.

iconectiv concurs with this recommendation and urges the Commission to utilize appropriate multi-stakeholder technical fora to identify and resolve issues associated with NNP implementation.

II. Elimination of the N-1 requirement

The Notice asks whether the current rule placing the query obligation on the N-1 carrier: (1) remains appropriate for ensuring that porting queries are made in an efficient manner, and (2) should be eliminated as part of any implementation of NNP.⁵

The Notice correctly posits that an approach different from the current N-1 rule will likely be required to ensure routing and completion of calls to ported numbers under NNP. In an NNP architecture, the N-1 requirement would create inefficiencies in LNP queries since a call to a nationally ported number would be routed to the donor LATA and, when eventually queried, reroute to the proper recipient network. This may impact post-dial delay and is unlikely to use the least cost route for that call. It may not even be feasible to reroute from the terminating switch which originally served the ported number. Accordingly, consideration of how best to ensure that queries are properly made should be one of the issues addressed by industry technical panels.

In the meantime, however, the N-1 requirement continues to efficiently serve this function. As the Notice recognizes, the N-1 requirement was recommended by the NANC and adopted by the Commission by reference to the NANC architecture recommendations. Any changes to the requirement should similarly be accompanied by industry technical standards and best practices developed by a competent multi-stakeholder technical committee.

The N-1 architecture established a default rule placing the query obligation on a carrier in the call path that was presumptively best positioned to do so, while providing the option for carriers to contract for the responsibility to taken by a different carrier in the

⁵ Notice at para. 22.

path.⁶ This default obligation sought to clearly define the carrier with responsibility for performing the query so as to ensure that the query was, in fact, performed. This default obligation was placed on the N-1 carrier because the Commission concluded that it would typically be more efficient than the alternatives. For example, placing the obligation on terminating carriers risked having a call routed to a supposed terminating carrier, only for that carrier to perform a query and discover that the number had been ported and required further routing.⁷ iconectiv submits that the N-1 default requirement has ensured that calls to ported numbers are completed in a manner that appropriately distributes the query load across the network while avoiding unnecessary queries, transport and connections.

Any change away from the current N-1 default rule – whether prior to or as part of the implementation of NNP – will likely raise both technical and cost considerations. For example, adoption of an All Call Query (ACQ) approach, or query at the point of origination of the call, could require either an additional regional database dedicated to inter-LATA ports or updating and expanding each of the seven existing regional databases. Such a change also may necessitate that carriers subscribe and connect with all of the regional databases (because subscribers from any NPA may relocate with their numbers into a carrier's local area) imposing new connection and transport costs, particularly on smaller regional carriers. Carriers might also incur additional cost maintaining connections to the Number Portability Administration Center (NPAC) for all of the regional databases.

⁶ *Telephone Number Portability*, Second Report and Order, 12 FCC Rcd. 12281, 12323 ¶¶ 73-75 (1997).

⁷ Notice at ¶ 15.

iconectiv understands that there are some LSMS gateways across the industry that support less than half of the seven regions, and some that only support one region.

Many carriers, notably the small-to-medium in size, outsource LSMS functions and access LNP data via service bureaus. While a service bureau most likely already supports all seven regional databases, the LNP query transaction volumes would similarly increase in an ACQ architecture and could drive up carrier costs.

III. Toll Dialing Parity Requirements

The Commission asks whether there are other rules that should be rescinded or modified to promote NNP.

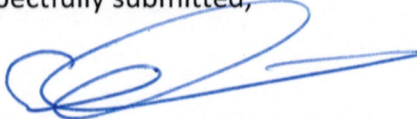
In reviewing the NANPA Dialing Plan Report, it is noted that twenty states still have 7-digit dialing for Home NPA calls, while four states have 10-digit dialing for all calls. The remaining states have a mixture of 7-digit and 10-digit dialing for Home NPA calls. For Home NPA toll calls, three states retain 7-digit dialing while four states have a combination of 7-digit and 10-digit dialing based on the NPA where customers reside within the state. The remaining states have 1+10-digit dialing. Consequently, since there are only four states that require 10-digit dialing on all calls, the potential for dialing confusion on NNP numbers could impact customers in most states.

Although the migration to 10-digit dialing is continuing through the implementation of All Services Overlays when NPA Relief Planning is needed, the Commission should consider whether full nationwide 10-digit dialing should be accelerated and concurrent with, if not precede, NNP deployment to avoid unexpected toll charges, post-dial delays, call completion problems, and related issues.

CONCLUSION

To avoid call completion problems, post-dial delay, and other potential issues in a NNP system, iconectiv believes that interested stakeholders should participate in the development of standards to facilitate the optimal implementation and maximum adoption of NNP. To that end, iconectiv suggests that the NNP architecture needs to be worked through the North American Numbering Council (NANC) Nationwide Number Portability (NNP) Issues Working Group and potentially the NANC Local Number Portability (LNP) Oversight Subcommittee, both launched subsequent to this NPRM & NOI. These forums provide appropriate vehicles for multi-stakeholder input, as do the ATIS industry consensus committees where detailed specifications will ultimately be documented. iconectiv looks forward to contributing in these forums and considers those to be a constructive means to address the key questions posed in this Notice.

Respectfully submitted,



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